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Oxford

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FOOD AND NUTRITION

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Preface

This book is intended for all who have an interest in food and nutrition, be it as consumers concerned about the health or otherwise of their diets, as cooks, food manufacturers, and salespeople, concerned about what they produce and sell, or as students of health and human sciences, who must understand, interpret, and communicate information to others.

These days the consumer is faced with dietary advice ranging from government publications to magazines, newspapers, and radio and TV programmes, not to mention food labels that almost require a training in chemistry and physiology to be understood, scare stories in the press, and claims and counter-claims in advertising.

Many of the terms used are technical, and few people can understand all of them. This dictionary is intended to help such understanding. It provides clear, authoritative definitions of some 6,000 terms associated with all aspects of food and nutrition, diet and health that may be encountered on food labels, in advertising, and in the media, as well as culinary terms that may be encountered in menus, cookery books, novels, and films. To help make decisions about which foods are nutritionally valuable, there are notes on those that are good sources of major nutrients.

Most textbooks and reference works list the nutrients present in foods as the amount present in 100 g (3½ oz), but a portion of some foods, such as bread or potatoes, could be much larger, while for other foods a portion may be only a few grams. Furthermore, the amount of any particular nutrient in a food varies with the agricultural variety of the food, or the breed of the animals, the growing conditions, and how it has been handled and cooked since cropping. The average vitamin and mineral content of some foods, such as bread and milk, varies less than others, such as lettuce and carrots. Therefore, without the analysis (and weight) of the particular samples, the vitamin and mineral contents of food are very approximate.

To help to assess the relative nutritional value of foods, we have taken the averages of the analysed values, and expressed them as rich, good, or simply 'sources' of the nutrients in an average-sized portion or serving, using the reference intakes of nutrients used for food labelling in the European Union (Appendix VI). A rich source of a nutrient provides at least 30%, good sources 20-30%, and sources 10-20% of the reference intake. Foods that are not listed as sources of nutrients, because they supply less than 10% of the reference intake in a serving, may nevertheless make a significant contribution to an overall diet.

Where a word is *starred in the text, this means that you can find further information under that entry.

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A

abalone A *shellfish (mollusc), *Haliotis splendens*, *H. rufescens*, *H. cracherodii*, also sometimes called ormer, or sea ear. Found especially in waters around Australia, and also California, Japan, the Channel Islands, and France. A 100-g portion is a rich *source of protein and niacin; a source of iron and vitamin B₁₂; supplies 130 kcal (550 kJ).

abboccato Italian; medium sweet wines.

abdug Iranian; drink made from *vodka and *yoghurt with *soda water.

abocada Spanish; medium sweet wines.

absinthe A herb *liqueur flavoured with wormwood (*Artemisia absinthium*); it is toxic, and banned in many countries. *See also* vermouth.

absolute alcohol Pure ethyl *alcohol.

AC Appellation contrôlée; *see* wine classification, France

acarbose The name of a group of complex *carbohydrates (oligosaccharides) which inhibit the *enzymes of *starch and *disaccharide digestion; used experimentally to reduce the digestion of starch, and so slow the rate of absorption of carbohydrates. It has been marketed for use in association with weight-reducing diet regimes as a 'starch blocker', but there is no evidence that it is of any use whatsoever in weight reduction.

acaricides Pesticides used to kill mites and ticks (the biological family Acaridae) which cause animal diseases and the spoilage of flour and other foods in storage.

accelase A mixture of *enzymes which *hydrolyse *proteins, including an *exopeptidase from the bacterium *Streptococcus lactis*, which is one of the starter organisms in dairy processing. The mixed enzymes are used to shorten the maturation time of cheeses and intensify the flavour of processed cheese.

accelerated freeze drying *See* freeze drying.

Ac'cent Trade name for the flavour enhancer *monosodium glutamate.

Acceptable Daily Intake (ADI) The amount of a food *additive that could be taken daily for an entire life-span without appreciable risk. Determined by measuring the highest dose of the substance that has no effect on experimental animals, then dividing by a safety factor of 100. Substances that are not given an ADI are regarded as having no adverse effect at any level of intake. *See also* no effect level.

accoub Edible thistle (*Goundelia tournefortii*) growing in the Mediterranean region and Middle East. The cooked flower buds have a flavour resembling that of asparagus or globe artichoke; the shoots can be eaten in the same way as *asparagus and the roots as *salsify.

accra Caribbean; heavy batter fritters with salt cod; also known as stamp-and-go, bacalaitos.

accunclata Corsican; goat, lamb, or mutton stew with potatoes.

acerola See cherry, West Indian.

acesulphames (acesulfames) A group of non-nutritive or intense (artificial) *sweeteners. The potassium salt, acesulphame-K, is some 200 times as sweet as *sucrose. It is not metabolized, and is excreted unchanged.

acetic acid One of the simplest organic *acids, also known systematically as ethanoic acid, chemically it is CH_3COOH . It is the acid of *vinegar (which is a solution of acetic acid in water), and is formed, together with *lactic acid, in the fermentation (*pickling) of foods.

Acetobacter A genus of bacteria which oxidize ethyl *alcohol to *acetic acid, used in the manufacture of *vinegar. They also grow as a film on the surface of beer wort, pickle brine, and fruit juices, when they are commonly known as 'mother of vinegar'.

aceto dolce Italian; pickles eaten as an appetizer.

acetoin A precursor of the compound *diacetyl, which is one of the constituents of the flavour of butter. Chemically acetyl methyl carbinol. Acetoin and diacetyl are produced by bacteria during the ripening of *butter.

acétomel Sweet-sour syrup of vinegar and honey used to preserve fruit; also known as agrodolce.

acetomenaphthone Synthetic compound with *vitamin K activity; vitamin K_3 , also known as menaquinone-0.

acetone One of the *ketone bodies formed in the body in *fasting. It is a metabolically useless side-product of fat metabolism, but detection of acetone in blood, urine, or breath may be clinically useful in cases of *diabetes, as a means of detecting ketosis. Also used as a solvent, e.g. in varnishes and lacquer. Chemically dimethyl ketone or propan-2-one ($\text{CH}_3\text{C}=\text{O}\cdot\text{CH}_3$).

acetylcholine The acetyl derivative of *choline, produced at some nerve endings (cholinergic nerves) both in the brain, where it acts as a chemical transmitter, and at the junctions between nerves and muscles, where it stimulates muscle contraction.

achene Botanical term for small, dry, one-seeded fruit which does not open to liberate the seed, e.g. a nut.

ACH index Arm, chest, hip index. A method of assessing a person's nutritional status by measuring the arm circumference, chest diameter, and hip width. See also anthropometry.

achlorhydria Deficiency of hydrochloric acid in gastric digestive juice. See also anaemia; gastric acidity.

achote See annatto.

achromotrichia Loss of the pigment of hair. One of the signs of *pantothenic acid deficiency in animals, but there is no evidence that pantothenic acid affects loss of hair colour in human beings.

acid Chemically, compounds that dissociate (ionize) in water to give rise to hydrogen ions (H^+); they taste sour. Mineral acids such as

hydrochloric, sulphuric, and nitric are more or less completely dissociated and so are strong acids. *Organic acids are generally weak since they are not completely dissociated. *See also* alkali; amino acids; buffers; esters; fatty acids; pH; salt.

acid drops Boiled sweets with sharp flavour from tartaric acid (originally acidulated drops); known as sourballs in USA.

acid foods, basic foods These terms refer to the residue of the *metabolism of foods. The *mineral salts of *sodium, *potassium, *magnesium, and *calcium are base-forming, while *phosphorus, *sulphur, and *chlorine are acid-forming. Which of these predominates in foods determines whether the residue is acidic or basic (alkaline); meat, cheese, eggs, and cereals leave an acidic residue, while milk, vegetables, and some fruits leave a basic residue. Fats and sugars have no mineral content and so leave a neutral residue. Although fruits have an acid taste due to organic acids and their salts, the acids are completely oxidized and the sodium and potassium salts form an alkaline residue.

acid, gastric The acid in the *gastric secretion is hydrochloric acid; *see also* achlorhydria; gastric acidity.

acidity *See* pH.

acidity regulators *See* buffers.

acid number, acid value (of a fat) A measure of its *rancidity due to *hydrolysis, releasing free *fatty acids from the *triacylglycerol of the fat; serves as an index of the efficiency of refining since the fatty acids are removed during refining and increase with deterioration during storage.

acidophilus milk Resembles *yoghurt but is more astringent in taste and cultured only with *Lactobacillus acidophilus*; claimed to enhance the growth of beneficial bacteria in the intestine.

acidophilus therapy A treatment for *constipation based on the consumption of milk containing a high concentration of viable *Lactobacillus acidophilus*, although the milk itself is unfermented. The effect is believed to be due to the implantation of the organisms in the intestine.

acidosis An increase in the acidity of *blood plasma to below the normal range of *pH 7.3–7.45, resulting from a loss of the buffering capacity of the plasma, alteration in the excretion of carbon dioxide, excessive loss of base from the body or metabolic overproduction of acids.

acids, amino *See* amino acids.

acids, fatty *See* fatty acids.

acids, fruit *Organic acids such as citric, malic, tartaric, etc. which give the sharp or sour flavour to fruits; often added to processed foods for taste.

ackee (akee) The fruit of the Caribbean tree *Blighia sapida*. The fruit is toxic when unripe because it contains the toxin hypoglycin.

acne Inflammatory pustular skin eruption occurring around sebaceous glands, especially around the time of puberty. Not known to be caused

or exacerbated by diet, although a low-fat diet is sometimes recommended. Severe persistent acne may be treated by topical application of *retinoids (synthetic *vitamin A derivatives).

acorn Fruit of the oak tree (*Quercus* spp.), used both for animal feed and (especially in Spain) to make a flour for baking. Roasted acorns have been used as a coffee substitute (German: *ersatz Kaffee*).

acorn sugar A sweet compound (quercitol) extracted from acorns (*Quercus* spp.).

ACP Acid calcium phosphate, see phosphates.

acraldehyde See acrolein.

acrodynia A specific type of skin lesion (dermatitis) seen in animals which are deficient in *vitamin B₆. There is no evidence for a similar dermatitis in deficient human beings.

acrolein (acraldehyde) An aldehyde formed when *glycerol is heated to a high temperature. It is responsible for the acrid odour and lachrymatory (tear-causing) vapour produced when fats are overheated. Chemically $\text{CH}_2=\text{CH}\cdot\text{CHO}$.

Acronize Trade name for the *antibiotic chlortetracycline; 'acronized' is used to describe products that have been treated with chlortetracycline, as, e.g. acronized ice.

ACTH See adrenocorticotrophic hormone.

actin One of the contractile *proteins of *muscle.

activators Compounds that increase the activity of *enzymes.

active oxygen method A method of measuring the stability of fats and oils to oxidative damage by bubbling air through the heated material and following the formation of peroxides. Also known as the Swift stability test.

actomyosin The combination of the two main contractile *proteins in *muscle, actin and myosin.

Adam's fig See plantain.

Addisonian pernicious anaemia See anaemia, pernicious.

additive Any compound not commonly regarded or used as a food which is added to foods as an aid in manufacturing or processing, or to improve the keeping properties, flavour, colour, texture, appearance, or stability of the food, or as a convenience to the consumer. The term excludes vitamins, minerals, and other nutrients added to enrich or restore nutritional value. Herbs, spices, hops, salt, yeast, or protein hydrolysates, air and water are usually excluded from this definition. Additives may be extracted from natural sources, synthesized in the laboratory to be chemically the same as the natural materials (and hence known as nature-identical), or may be synthetic compounds that do not occur in nature.

In most countries only additives from a permitted list of compounds which have been extensively tested for safety may legally be added to foods. The additives used must be declared on food labels, using either their chemical names or their numbers in the EU list of permitted

additives (*E-numbers). Some additional compounds, numbered in the same sequence but without the preface E, are permitted in the UK.

See also Acceptable Daily Intake and Appendix VIII.

adenine A *nucleotide, one of the purine bases of the *nucleic acids (DNA and RNA). The compound formed between adenine and *ribose is the nucleoside adenosine, and can form four phosphorylated derivatives important in metabolism: adenosine monophosphate (AMP, also known as adenylic acid); adenosine diphosphate (ADP); adenosine triphosphate (ATP) and cyclic adenosine monophosphate (cAMP). See also ATP; energy metabolism.

adenosine See adenine.

adermin An obsolete name for *vitamin B₆.

ADI See Acceptable Daily Intake.

adipectomy Surgical removal of subcutaneous fat.

adipocyte A fat-containing cell in *adipose tissue.

adipose tissue Body fat — the cells that synthesize and store *fat, releasing it for *metabolism in *fasting. Also known as white adipose tissue, to distinguish it from the metabolically more active *brown adipose tissue, which is involved in heat production to maintain body temperature. Much of the body fat reserve is subcutaneous; in addition there is adipose tissue around the organs, which serves to protect them from physical damage. In lean people, 20–25% of body weight is adipose tissue, increasing with age; the proportion is greater in people who are *overweight or *obese. Adipose tissue contains 82–88% fat, 2–2.6% protein and 10–14% water. The energy yield of adipose tissue is 8000–9000 kcal (34–38 MJ) per kg or 3600–4000 kcal (15.1–16.8 MJ) per pound.

adipsia Absence of thirst.

Adirondack bread American baked product made from ground *maize, butter, wheat flour, eggs, and sugar.

adlay The seeds of a wild grass (Job's tears, *Coix lachryma-jobi*) botanically related to *maize, growing wild in parts of Africa and Asia and eaten especially in the south-east Pacific region.

adoucir French; to reduce the bitterness of food by prolonged cooking, or to dilute a dish with milk, stock, or water to make it less salty.

ADP Adenosine diphosphate, see adenine; ATP.

adrenal glands Also called the suprarenal glands, small *endocrine glands situated just above the kidneys. The inner part (medulla) secretes the *hormones *adrenaline and *noradrenaline, while the outer part (the cortex) secretes *steroid hormones known as corticosteroids, including cortisol and *aldosterone.

adrenaline Also known as epinephrine. A hormone secreted by the medulla of the *adrenal gland, especially in times of stress or in response to fright or shock. Its main actions are to increase blood pressure and to mobilize tissue reserves of *glucose (leading to an increase in the blood glucose concentration) and fat, in preparation for

flight or fighting. Derived from the *amino acids *phenylalanine or *tyrosine.

adrenocorticotrophic hormone (ACTH) A *hormone secreted by the anterior part of the pituitary gland which stimulates the *adrenal gland to secrete corticosteroids.

adzuki beans See bean, adzuki.

adulteration The addition of substances to foods etc. in order to increase the bulk and reduce the cost, with intent to defraud the purchaser. Common adulterants are starch in spices, water in milk and beer, etc. The British Food and Drugs Act (1860) was the first legislation to prevent such practices.

adverse reactions to foods 1 Food aversion, unpleasant reactions caused by emotional responses to certain foods rather than to the foods themselves, which are unlikely to occur in blind testing when the foods are disguised.

2 Food allergy, physiological reactions to specific foods or ingredients due to an immunological response. *Antibodies to the *allergen are formed as a result of previous exposure or sensitization, and cause a variety of symptoms when the food is eaten, including gastro-intestinal disturbances, skin rashes, asthma, and, in severe cases, anaphylactic shock, which may be fatal.

3 Food intolerance, physiological reactions to specific foods or ingredients which are not due to immunological responses, but may result from the irritant action of spices, pharmacological actions of some naturally occurring compounds (e.g. *caffeine), or an inability to metabolize a component of the food as a result of an *enzyme defect. See also amino acid disorders; disaccharide intolerance; genetic diseases.

advocat Dutch; liqueur made from brandy and eggs.

adzuki bean See bean, adzuki.

aerobic 1 Aerobic micro-organisms (aerobes) are those that require oxygen for growth; obligate aerobes cannot survive in the absence of oxygen. The opposite are anaerobic organisms, which do not require oxygen for growth; obligate anaerobes cannot survive in the presence of oxygen.

2 Aerobic exercise is physical activity which requires an increase in heart rate and respiration to meet the increased demand of muscle for oxygen, as contrasted with maximum exertion or sprinting, when muscle can metabolize anaerobically, producing *lactic acid, which is metabolized later, creating a need for increased respiration after the exercise has ceased (so-called oxygen debt).

aerosol cream Cream *sterilized and packaged in aerosol canisters with a propellant gas to expel it from the container, giving conveniently available whipped cream. Gelling agents and *stabilizers may also be added.

aerosporin See polymyxins.

aesculin (esculin) A glucoside of dihydroxycoumarin found in the leaves and bark of the horse chestnut tree (*Aesculus hippocastanum*) which has an effect on *capillary fragility.

AFD Accelerated freeze drying, *see* freeze drying.

aflatoxins A group of mycotoxins formed by the *mould *Aspergillus flavus*, which can grow on *peanuts and cereal grains when they are stored under damp and warm conditions. Several different aflatoxins are known; in addition to being acutely toxic, many, especially aflatoxin B₁, are potent *carcinogens. Fungal spoilage of foods with *A. flavus* is a common problem in many tropical areas, and aflatoxin is believed to be the cause of much primary liver cancer in parts of Africa. Aflatoxins can be secreted in milk, so there is strict control of the level of aflatoxins in cattle feed.

agalactia Failure of the mother to secrete enough milk to feed a suckling infant.

agar Dried extracts from various seaweeds, including *Gelidium* and *Gracilaria* spp. It is a partially soluble *non-starch polysaccharide, composed of *galactose units. It swells with water to form a *gel, and is used in soups, jellies, ice-cream, and meat products. It is also used as the basis of bacteriological culture media, as an adhesive, for sizing silk and as a stabilizer for emulsions. Also called agar-agar, Macassar gum, vegetable gelatine.

ageing 1 As wines age, they develop bouquet and a smooth mellow flavour, associated with slow oxidation and the formation of *esters, as well as losing the harsh yeasty flavour of young wine.

2 The ageing of meat by hanging in a cool place for several days results in softening of the muscle tissue, which stiffens after death (rigor mortis). This stiffening is due to anaerobic metabolism leading to the formation of lactic acid when the blood flow ceases.

3 Ageing of wheat flour for bread making is due to oxidation, either by storage for some weeks after milling or by chemical action. Freshly milled flour produces a weaker and less resilient dough, and hence a less 'bold' loaf, than flour which has been aged. Chemicals that are used to age flour include ammonium persulphate, ascorbic acid (*vitamin C), chlorine, *sulphur dioxide, potassium bromate, and *cysteine. In addition, nitrogen peroxide or benzoyl peroxide may be used to bleach flour, and chlorine dioxide both bleaches and ages flour. The use of these chemicals, and the amounts that may be used, is controlled by law in most countries.

agene Nitrogen trichloride, used at one time as a bleaching and improving agent for wheat flour in bread making. It can react with the *amino acid *methionine in proteins to form the toxic compound methionine sulfoximine, and is no longer used.

ageusia Loss or impairment of the sense of *taste.

agglomeration The process of producing a free-flowing, dust-free powder from substances such as dried milk powder and wheat flour, by moistening the powder with droplets of water and then redrying in a stream of air. The resulting agglomerates can readily be wetted.

agglutinins *See* lectins.

Aginomoto Trade name for the flavour enhancer *monosodium glutamate. *See* flavour potentiator.

agnelloto An envelope of *pasta, stuffed with minced meat, cheese, or vegetables, cut into a half-moon shape, and so differing from *ravioli, which is cut into squares.

agneshka churba Bulgarian; whole spring lamb stuffed with rice, offal, and raisins, then roasted. A traditional Easter dish.

agrodolce Italian; sweet and sour. *See* acétomel.

aguardiente Spanish; *see* marc.

aguja Spanish; young wines.

algre-douce French; sweet and sour. *See* acétomel.

algrette French; small, light, fried flaky *pastry biscuit.

alguillette A thin strip or slice of cooked poultry, meat, or fish.

aileron French; wing tip of poultry.

allade French; prepared with garlic.

AIN American Institute of Nutrition.

aloli Garlic-flavoured mayonnaise used in Provençale cooking. *See also* salad dressing.

air classification A way of separating the particles of powdered materials in a current of air, on the basis of their weight and size or density. Particularly applied to the fractionation of the *endosperm of milled wheat flour; smaller particles are richer in protein. Various fractions range from 3% to 25% protein.

aitchbone Cut of *beef from the upper part of the leg. Sometimes incorrectly called the edgebone.

ajada Spanish; sauce made from bread steeped in water and garlic.

ajwain *See* lovage.

akee *See* ackee.

akkra Caribbean (originally West African); fritter made from black-eyed peas or *soya beans. Also known as calas, samsa.

akni Indian; *bouillon, made from water and herbs, used for cooking rice and vegetables.

akutok Inuit (Eskimo); strips of dried caribou meat; the outer part has a crust, but the inside is only partially dry.

akvavit *See* aquavit.

ala *See* bulgur.

alactasia Partial or complete deficiency of the *enzyme *lactase in the small intestine, resulting in an inability to digest the sugar *lactose in milk, and hence intolerance of milk and milk products. *See also* disaccharide intolerance.

alanine A non-essential *amino acid, found in all proteins. β -Alanine is an *isomer of alanine in which the amino group is attached to carbon-3 of the molecule rather than carbon-2 as in alanine; it is important as part of *pantothenic acid, *carnosine, and *anserine.

alant starch *See* inulin.

Alaska, baked See baked Alaska.

albacore A long-finned species of tunny fish, *Thynnus alalunga*, usually canned as *tuna fish.

albedo The white pith (mesocarp) of the inner peel of citrus fruits, accounting for some 20–60% of the whole fruit. It consists of sugars, *cellulose, and *pectins, and is used as a commercial source of pectin.

albert French name for English hot *horseradish sauce.

albigoise, à l' French; garnish for meat consisting of stuffed tomatoes and potato croquettes.

albion French; 1 fish soup made with lobster quenelles and truffles; 2 chicken broth with truffles, asparagus, chicken liver quenelles, and cocks' combs.

albondigas Spanish (Castilian); meat balls or dumplings.

albumin (albumen) A specific class of relatively small *proteins which are soluble in water and readily coagulated by heat. Ovalbumin is the main protein of egg-white, lactalbumin occurs in milk, and plasma or serum albumin is one of the major blood proteins. Serum albumin concentration is sometimes measured as an index of *protein-energy malnutrition.

Often used as a non-specific term for proteins (e.g. albuminuria is the excretion of proteins in the urine).

albumin index A measure of the quality or freshness of an egg — the height : width ratio of the albumin when the egg is broken onto a flat surface. As the egg deteriorates, so the albumin spreads further, i.e. the albumin index decreases.

albumin milk See protein milk.

albuminoids Fibrous proteins that have a structural or protective rather than enzymic role in the body. Also known as scleroproteins. The main proteins of the *connective tissues of the body. There are three main types: (1) collagens in skin, tendons, and bones are resistant to enzymic digestion with trypsin and pepsin, and can be converted to soluble *gelatine by boiling with water; (2) elastins in tendons and arteries, which are not converted to gelatine on boiling; (3) keratins, the proteins of hair, feathers, scales, horns, and hoofs, which are insoluble in dilute acid or alkali, and are resistant to all animal digestive enzymes.

albumin water Beverage made from lightly whisked egg-white and cold water, seasoned with lemon juice and salt.

alcohol Chemically alcohols are compounds with the general formula $C_nH_{(2n+1)}OH$. The alcohol in *alcoholic beverages is ethyl alcohol (ethanol, C_2H_5OH); pure ethyl alcohol is also known as absolute alcohol. The *energy yield of alcohol is 7 kcal (29 kJ)/gram.

The strength of alcoholic beverages is most often shown as the percentage of alcohol by volume (sometimes shown as % v/v). This is not the same as the percentage of alcohol by weight (% w/v) since alcohol is less dense than water: 5% v/v alcohol = 3.96% by weight (w/v); 10% v/v = 7.93% w/v and 40% v/v = 31.7% w/v. See also proof spirit.

alcohol, denatured Drinkable alcohol is subject to tax in most countries and for industrial use it is denatured to render it unfit for consumption, by the addition of 5% methyl alcohol (methanol, CH_3OH , also known as wood alcohol), which is poisonous. This is industrial rectified spirit. For domestic use a purple dye and pyridine (which has an unpleasant odour) are also added; this is methylated spirit.

alcoholic beverages Drinks made by fermenting fruit juices, sugars, and fermentable carbohydrates with *yeast to form *alcohol. These include *beer, *cider, and *perry, 4–6% alcohol by volume; *wines, 9–13% alcohol; *spirits (e.g. *brandy, *gin, *rum, *vodka, *whisky) made by distilling fermented liquor, 38–45% alcohol; *liqueurs made from distilled spirits, sweetened and flavoured, 20–40% alcohol; and fortified wines (aperitif wines, *madeira, *port, *sherry) made by adding spirit to wine, 18–25% alcohol. See also alcohol; proof spirit.

alcoholism Physiological addiction to *alcohol, associated with persistent heavy consumption of *alcoholic beverages. In addition to the addiction, there may be damage to the liver (cirrhosis), stomach (gastritis), and pancreas (pancreatitis), as well as behavioural changes and peripheral nerve damage.

alcohol units For convenience in calculating intakes of alcohol, a unit of alcohol is defined as 8 g (10 mL) of absolute alcohol; this is the amount in $\frac{1}{2}$ pint (300 mL) beer, a single measure of spirit (25 mL) or a single glass of wine (100 mL).

The Royal College of Physicians of England has set upper limits of prudent consumption of alcohol as 21 units (= 168 g alcohol) per week for men and 14 units (= 112 g alcohol) per week for women.

alcool blanc French; white spirit (silent spirit) or eau de vie. Distilled *spirits from fermented fruit juice.

al dente Firm to the bite, applied to pasta and cooked vegetables (Italian: 'to the tooth').

alderman's walk The name given in London to the longest and finest cut from the haunch of venison or lamb.

aldosterone A *steroid hormone secreted by the *adrenal cortex which controls the excretion of salts and water by the kidneys.

ale See beer.

aleatico A *grape variety widely used for *wine making, although not one of the classic varieties; makes fragrant sweet red wines.

alecost An aromatic herbaceous plant, *Tanacetum* (*Chrysanthemum*) *balsamita*, related to *tansy, used in salads and formerly used to flavour ale.

aleurone layer The single layer of large cells under the bran coat and outside the endosperm of *cereal grains. About 3% of the weight of the grain, and rich in protein, as well as containing about 20% of the *vitamin B₁, 30% of the *vitamin B₂, and 50% of the *niacin of the grain. Botanically the aleurone layer is part of the endosperm, but in milling it remains attached to the inner layer of the *bran.

alewives River herrings, *Pomolobus pseudoharengus*, commonly used for canning after salting.

alexander A cocktail; usually gin, crème de cacao, and cream, although other spirits may be used.

alexanders A herb, black lovage (*Smyrniolum olisatrum*) with a celery-like flavour.

alfalfa Or lucerne, *Medicago sativa*, commonly grown for animal feed and silage; the seeds can be soaked in water to germinate and then eaten as sprouts.

algae Simple (primitive) plants that do not show differentiation into roots, stems, and leaves. They are mostly aquatic — either seaweeds or pond and river-weeds. Some seaweeds, such as *dulse and *Irish moss, have long been eaten, and a number of unicellular algae, including *Chlorella*, *Scenedesmus*, and **Spirulina* spp. have been grown experimentally as novel sources of food (50–60% of the dry weight is protein).

algérienne 1 Garnish for steak consisting of tomatoes and peppers simmered in oil.

2 Fried eggs served with a purée of tomatoes, peppers, and aubergine.

3 Salad of courgettes, tomatoes, and cooked sweet potato.

4 Sautéed chicken and aubergine with sauce of tomatoes, garlic, and onions.

5 Cream soup made from sweet potatoes and filbert nuts.

alginates Salts of alginic acid found in many seaweeds as calcium salts or the free acid. Chemically, alginic acid is a non-starch *polysaccharide composed of mannuronic acid units.

Iron, magnesium, and ammonium salts of alginic acid form viscous solutions and hold large amounts of water. They are used as thickeners, stabilizers and gelling, binding, and emulsifying agents in food manufacture, especially in *ice-cream and synthetic cream. Trade name Manucol.

alginic acid See alginates.

aligoté A *grape variety widely used for *wine making, although not one of the classic varieties. Burgundy's second-ranking white grape; the wines need drinking within three years.

alimentary canal The digestive tract, comprising (in man) the mouth, oesophagus, stomach, duodenum, and small and large intestines. See also gastro-intestinal tract.

alimentary pastes See pasta.

alkali (or base) A compound that takes up hydrogen ions and so raises the *pH of a solution; see also acid; buffers; salt.

alkali formers See acid foods.

alkali reserve See buffers.

alkaloids Naturally occurring organic bases which have marked pharmacological actions in man and other animals. Many are found in

plant foods, including potatoes and tomatoes (the *Solanum* alkaloids), or as the products of fungal action (e.g. ergot), although they also occur in animal foods (e.g. tetrodotoxin in *puffer fish, tetramine in *shellfish), and some are formed in the body (e.g. tryptamine, tyramine, phenylethylamine, and histamine are *amines formed by the decarboxylation of *amino acids). A number of alkaloids are used medically, e.g. morphine, colchicine, quinine, and atropine.

alkalosis See acidosis.

alkannet (alkanet, alkannin, alkanna) A colouring obtained from the root of *Anchusa (Alkanna) tinctoria* which is insoluble in water but soluble in alcohol and oils. It is blue in alkali (or in the presence of lead), crimson with tin and violet with iron. Used for colouring fats, cheese, essences, and inferior *port wine. Also known as orcanella.

allantoin The oxidation product of *uric acid which is the end-product of *purine metabolism in most animals apart from man and apes, which excrete uric acid.

All-Bran Trade name for a breakfast cereal prepared from wheat *bran, and hence a rich source of *non-starch polysaccharide. A 60-g portion is a rich *source of vitamins B₁, B₂, B₆, B₁₂, niacin, folate, iron, and copper; a source of protein; contains 1.5 g of fat of which 24% is saturated; provides 18 g of dietary fibre; supplies 160 kcal (670 kJ).

allmande Classic French *sauce, velouté blended with egg yolks and cream. Also known as sauce blonde or parisienne. Named for its light colour, as opposed to sauce *espagnole, which is dark.

allemande, à l' German style; dishes finished or garnished with German specialities such as sauerkraut, smoked sausage, or pickled pork.

allergen A chemical compound, commonly a protein, which causes the production of antibodies, and hence an allergic reaction. See also adverse reactions to foods.

allergy *Adverse reaction to foods caused by the production of antibodies.

alliance French; *sauce made from reduced (partially concentrated) white wine with tarragon vinegar and egg yolk.

allicin A sulphur-containing compound partially responsible for the flavour of *garlic.

alligator pear See avocado.

Allinson bread A wholewheat *bread named after Allinson, who advocated its consumption in England at the end of the nineteenth century, as did Graham in the USA (hence *Graham bread). Now trade name for a wholemeal loaf.

all-oli Spanish (Catalan); oil and garlic sauce prepared by pounding garlic in olive oil.

allotriophagy An unnatural desire for abnormal foods; also known as cissa, cittosis, and pica.

allspice Dried fruits of the evergreen plant *Pimenta officinalis*, also known as pimento (as distinct from *pimiento) or Jamaican pepper. The name